

Taxonomic Notes on *Psychotria* (Rubiaceae) in Western South America

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ABSTRACT. The new name *Psychotria cardiomorpha* C. M. Taylor & A. Pool replaces *P. cordifolia* HBK; the new combinations *Psychotria cardiomorpha* subsp. *perpusilla* (Steyermark) C. M. Taylor & A. Pool, *P. campyloneuroides* (Standley) C. M. Taylor, *P. coneophoroides* (Rusby) C. M. Taylor, *P. gentryi* (Dwyer) C. M. Taylor, *P. jervisei* (Standley) C. M. Taylor, *P. ostreophora* (Wernham) C. M. Taylor, *P. cuatrecasasii* (Standley ex Steyermark) C. M. Taylor, and *P. timbiquensis* (Standley) C. M. Taylor apply to species formerly treated in *Cephaëlis*; the new name *P. cordobensis* C. M. Taylor applies to *C. crassifolia* Standley; and additional synonymy is suggested.

Psychotria L. is estimated to include about 1,000 species (Hamilton, 1989), with perhaps 500 of these neotropical. This genus is represented in the Neotropics by three subgenera: subg. *Tetramerae* Petit, pantropical, with perhaps three species found in the Caribbean region; subg. *Psychotria*, pantropical, found throughout the Neotropics but perhaps most speciose in the Caribbean region; and subg. *Heteropsychotria* Steyermark, exclusively neotropical, also found throughout this region though most speciose in South America. *Psychotria* has been treated only on a country or regional basis, most extensively by Steyermark (1972, 1974). He determined that *Cephaëlis* Swartz included a polyphyletic assemblage of species better placed in subgenus *Heteropsychotria*, but did not publish transfers for all of the species affected.

We present below resolution of a nomenclatural problem, further transfers into *Psychotria* of species formerly placed in *Cephaëlis*, and notes on synonymy for several species described from western tropical South America.

NOMENCLATURAL NOTES

During review of western South American Rubiaceae for preparation of the *Catalogue of the Flowering Plants and Gymnosperms of Peru* (Brako & Zarucchi, 1993), the following nomenclatural problem and previously unreported synonymy were discovered.

Psychotria cardiomorpha C. M. Taylor & A. Pool, nom. nov. Replaced name: *Psychotria cordifolia* HBK, Nov. Gen. Sp. 3: 365. 1819, nom. illeg., not *Psychotria cordifolia* F. Dietrich, Vollst. Lex. Gärtn. 7: 618. 1807, nom. superfl. for *Psychotria macropoda* Ruiz & Pavón (= *Geophila macropoda* (Ruiz & Pavón) DC.). TYPE: Venezuela. Amazonas: in ripa fluminis Atabapo prope San Balthazar, *Humboldt & Bonpland s.n.* (holotype, P-HBK not seen).

Psychotria cardiomorpha* subsp. *perpusilla (Steyermark) C. M. Taylor & A. Pool, comb. nov. Basionym: *Psychotria cordifolia* subsp. *perpusilla* Steyermark, Mem. New York Bot. Gard. 23: 708. 1972, nom. illeg. TYPE: Guyana. Pirara, *Schomburgk 202* (holotype, P not seen).

Psychotria cordifolia HBK has been used by previous authors, but this name is an illegitimate later homonym. Although Dietrich's name was also illegitimate, it is validly published for the purposes of priority. The new name follows the original epithet in referring to the striking heart-shaped leaves of this species.

Psychotria ramiflora Rusby, Mem. New York Bot. Gard. 7: 277. 1927. TYPE: Bolivia. Beni: Rurrenabaque, *Cárdenas 1852* (holotype, NY microfiche seen, photo F).

Psychotria subpedicellata Steyermark, Mem. New York Bot. Gard. 23: 507. 1972. Syn. nov. TYPE: Peru. Loreto: Florida, Río Putumayo at mouth of Río Zubineta, *Klug 2019* (holotype, NY microfiche seen; isotype, F).

Examination of the descriptions and types of these names shows that they represent the same species. It is similar to *Psychotria limitanea* Standley and *P. subinundulata* Benthams, but is easily distinguished by its inflorescences about twice as long, 40–50 cm long. Steyermark apparently overlooked Rusby's name.

NEW TRANSFERS FROM *Cephaëlis* TO *Psychotria*

The justification for the inclusion of *Cephaëlis* in *Psychotria* subg. *Heteropsychotria* was presented in detail by Steyermark (1972) and has been summarized more recently by Taylor et al. (1991) and Taylor & Lorence (1992). *Cephaëlis* was segregated from *Psychotria* based primarily on the presence of relatively congested inflorescences and relatively large, often showy floral bracts, characteristics that Steyermark showed to be derived in parallel several times within subgenus *Heteropsychotria* and also to intergrade continuously with species included in *Psychotria*. This characteristic was not always interpreted similarly by different authors, and some species received names independently in both genera. *Cephaëlis* has been studied predominantly on a country or regional basis, and in several cases the same species has been described under different names in different countries.

Consequently, species of *Cephaëlis* cannot be confidently transferred into *Psychotria* without individual study. Careful study is important also because epithets in *Cephaëlis* are frequently precluded in *Psychotria*, and transfers require the creation of a new name in that large genus.

Several species described in *Cephaëlis* from Ecuador, Colombia, and Peru are here transferred to *Psychotria*, and the synonymy of some additional names is noted. This is not a comprehensive treatment of the species described in *Cephaëlis* from these countries, but an installment in the ongoing review of *Psychotria* from this area. Combinations, new names, and synonymizations previously published for neotropical species of *Cephaëlis* have been summarized by Andersson (1992).

***Psychotria campyloneuroides* (Standley) C. M.**

Taylor, comb. nov. Basionym: *Evea campyloneuroides* Standley, Contr. U.S. Natl. Herb. 18: 123. 1916. *Cephaëlis campyloneuroides* (Standley) Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 4: 294. 1929. TYPE: Colombia. Valle del Cauca: Córdoba, Dagua Valley, Pittier 581 (holotype, US microfiche seen).

Psychotria calimensis Standley ex Steyermark, Acta Biol. Venez. 4: 96. 1964. Syn. nov. TYPE: Colombia. Valle del Cauca: Río Calima, región del Chocó, La Trojita, Cuatrecasas 16298 (holotype, F; isotypes, US microfiche seen, VEN not seen).

The type collection of *Psychotria calimensis* has a markedly tripartite rather than capitate inflorescence, but recent additional collections show intermediate conditions, and these two species cannot be maintained.

***Psychotria coneophoroides* (Rusby) C. M. Taylor**, comb. nov. Basionym: *Cephaëlis coneophoroides* Rusby, Bull. New York Bot. Gard. 4: 372. 1907. TYPE: Bolivia. Without locality or date, Bang 2866 (holotype, NY not seen; isotypes, F not seen, GH not seen, MO, US microfiche seen).

Coffea umbellata Ruiz & Pavón, Fl. Peruv. 2: 64, t. 215, fig. a. 1799. Syn. nov. *Cephaëlis umbellata* (Ruiz & Pavón) Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 7: 301. 1931; not *Psychotria umbellata* Vellozo Concini, 1825. TYPE: Peru. Huánuco: Cochero and Cinchao, Ruiz & Pavón s.n. (holotype, MA not seen; isotypes, B destroyed, photos (F neg. #845) F, MO).

Uragoga weberbaueri Krause, Bot. Jahrb. 40: 345. 1908. Syn. nov. Not *Psychotria weberbaueri* Standley, 1930. TYPE: Peru. San Martín: near Moyobamba, Weberbauer 4540 (holotype, B destroyed, photo (F neg. #780) MO).

The name "*Coffea umbellata*" was recently treated as doubtful in generic placement (Brako & Zarucchi, 1993). With recent additional collections available, this species appears to be closely related to those placed in section *Pseudocephaëlis* Steyermark series *Appunianae* Steyermark. In particular it is similar to *Psychotria cordobensis* C. M. Taylor and *P. jervisei* (Standley) C. M. Taylor of Colombia and Ecuador; these all share thickly margined subcoriaceous leaves, umbelliform inflorescences with three to five capitula, and relatively large fruits with long calyx limbs, but can be separated by the venation pattern on the abaxial leaf surfaces, with *P. coneophoroides* having numerous closely set secondary and intersecondary veins and strongly reticulate lesser venation, in contrast to 10–15 secondary veins with only one to three intersecondary veins developed between each pair of secondary veins and the lesser venation not visible in the other two species. All three of these species have been confused with *P. cuatrecasasii* (Steyermark) C. M. Taylor, which is found throughout this area. *Psychotria cuatrecasasii* differs from all three species by its single capitulum, but resembles *P. coneophoroides* in its strongly reticulate leaf venation.

***Psychotria cordobensis* C. M. Taylor**, nom. nov.

Replaced name: *Cephaëlis crassifolia* Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 7: 77. 1930; not *Psychotria crassifolia* Miquel, Ann. Mus. Bot. Lugdano-Batavum 4: 205. 1869. TYPE: Colombia. Valle del Cauca: Córdoba, Killip 5133 (holotype, US microfiche seen; isotypes, GH not seen, NY microfiche seen).

This species is known from Chocó and Valle provinces in Colombia at 0–1,200 m elevation. Its distinction from *Psychotria coneophoroides* is discussed under that species. It can be separated from *P. jervisei* by its relatively small leaves with relatively short tips and usually only one intersecondary vein present between each pair of secondary veins, in contrast to the leaves larger with relatively long slender tips, usually three intersecondary veins present between each pair of secondary veins, and also a higher elevational range in *P. jervisei*.

Psychotria cuatrecasasii (Standley ex Steyermark) C. M. Taylor, comb. nov. Basionym: *Cephaëlis cuatrecasasii* Standley ex Steyermark, Acta Biol. Venezuela 4: 12, fig. 6. 1964. TYPE: Colombia. Norte de Santander: Cordillera Oriental, región del Sarare, hoya del Río Margua entre Campohermoso y Río Negro, Cuatrecasas 12894 (holotype, US microfiche seen; isotype, F).

Cephaëlis macrocarpa Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 8: 64. 1930. Syn. nov. Not *Psychotria macrocarpa* Hooker f., Fl. Brit. India 3: 162. 1880. *Psychotria costanensis* Steyermark, Mem. New York Bot. Gard. 23: 658. 1972. TYPE: Venezuela. Aragua: prope Colonia Tovar, Fendler 1990 (holotype, GH not seen; isotype, K not seen).

Steyermark (1974) described and illustrated *Psychotria costanensis* in detail; examination of the type specimen of *Cephaëlis cuatrecasasii* shows that these names are synonymous. This species is now known from Venezuela to northwestern Colombia, and south to Peru (Schunke 199, F).

Psychotria gentryi (Dwyer) C. M. Taylor, comb. nov. Basionym: *Cephaëlis gentryi* Dwyer, Selbyana 2: 57. 1977. TYPE: Ecuador. Los Ríos: Río Palenque Science Center, Km 56 of Quevedo–Santo Domingo road, Dodson 5169 (holotype, MO; isotypes, RPSC not seen, SEL not seen, US not seen).

This species is similar to *Psychotria schunkeana* (Standley) C. M. Taylor (*Cephaëlis schunkeana* Standley) from Peru, particularly in the well-developed stipules and relatively large globose fruits with smooth pyrenes. This latter species is poorly known and may not be distinct, but its flowers have not been seen.

Psychotria jervisei (Standley) C. M. Taylor, comb. nov. Basionym: *Cephaëlis jervisei* Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 7: 79. 1930. TYPE: Colombia. Antioquia: *Jervise s.n.*

(holotype, K not seen; isotype, F (type fragment)).

This species is known only from Antioquia Province in Colombia at 1,800–2,060 m elevation. Its distinction from *Psychotria cordobensis* is summarized under the discussion of that species. *Psychotria jervisei* is also similar to *P. transiens* Wernham, which can be separated by its well-developed reticulate tertiary venation on the abaxial leaf surfaces in contrast to smooth and generally invisible tertiary venation in *P. jervisei*.

Psychotria oleandrella (Standley) C. M. Taylor, Monogr. Syst. Bot. 45: 1255. 1993. *Cephaëlis oleandrella* Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 4: 334. 1929. TYPE: Peru. Junín: La Merced, 1,200 m, Macbride 5635 (holotype, F; isotype, US microfiche seen).

Cephaëlis caudata Standley ex Steyermark, Acta Biol. Venezuela 4: 12. 1964. Syn. nov. TYPE: Colombia. Valle del Cauca: Río Calima, La Esperanza, 5–10 m, 6–7 Mar. 1944, Cuatrecasas 16740 (holotype, US microfiche seen; isotypes, F, VEN not seen).

Examination of the types of these names shows that they are synonymous. This species is also known from Ecuador (*Mexia* 6867, MO) and Bolivia (*Gentry & Solomon* 44521, MO). It is similar to *Psychotria schunkei* C. M. Taylor (= *Cephaëlis killipii* Standley), from which it can be distinguished by its relatively narrower leaf blades with unusually narrow long tips.

Psychotria ostreophora (Wernham) C. M. Taylor, comb. nov. Basionym: *Cephaëlis ostreophora* Wernham, J. Bot. 55: 284. 1917. TYPE: Colombia. Bogotá: Servitá y Villavicencio, Triana s. n. (holotype, BM not seen; isotype, F).

Cephaëlis salicifolia Roemer & Schultes, Syst. Veg. 5: 214. 1819. Syn. nov. Not *Psychotria salicifolia* HBK, 1819, not *Psychotria salicifolia* Roemer & Schultes, 1819, not *Psychotria salicifolia* Hemsley, 1881. TYPE: Venezuela. Sucre: Cocollar, Humboldt & Bonpland s.n. (holotype, B-WILLD, photo (neg. #766) F; isotype, F (fragment)).

Cephaëlis acreana K. Krause, Notizbl. Bot. Gart. Berlin-Dahlem 6: 211–212. 1914. Syn. nov. Not *Psychotria acreana* Krause, 1914. TYPE: Peru. Madre de Dios: Río Acre, Alto Acre bei Seringal Auristella, Mar. 1911, Ule 9856 (holotype, B destroyed, photo (F neg. #713) F).

Evea lucentifolia Blake, Contr. U.S. Natl. Herb. 20: 532, fig. 42. 1924. Syn. nov. *Psychotria lucentifolia* (Blake) Steyermark, Mem. New York Bot. Gard. 23: 610. 1972. TYPE: Venezuela. Carabobo: Guaremales, road from Puerto Cabello to San Felipe, Pit-

tier 8911 (holotype, US not seen; isotype, NY microfiche seen).

Cephaëlis setifera Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 7: 80. 1930. Syn. nov. TYPE: Colombia. Cauca: highlands of Popayán, *Lehmann BT-940* (holotype, F, photo (F neg. #52039) F; isotypes, F (fragment), GH not seen, K not seen). Standley noted the type number as "970" in the original publication, but the only material of this species found at F was *Lehmann BT-940*, which was annotated by Standley and agrees in all other ways with the collection data he cited; the citation of "970" was apparently a typographical error.

Cephaëlis bella Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 8: 372. 1931. Syn. nov. *Psychotria vasquezii* C. M. Taylor, Monogr. Syst. Bot. 45: 1256. 1993. TYPE: Peru. Loreto: Puerto Arturo, Yurimaguas, lower Río Huallaga, *Williams 5207* (holotype, F, photo (F neg. #52044) F).

Cephaëlis umbriana Standley, Publ. Field Mus. Nat. Hist., Bot. Ser. 11: 192. 1936. Syn. nov. *Psychotria umbriana* (Standley) Steyermark, Mem. New York Bot. Gard. 23: 637. 1972. TYPE: Colombia. Putumayo: Umbria, 00°54'N, 76°10'W, *G. Klug 1718* (holotype, F, photo (F neg. #52033) F).

Examination of the types of these names show that they are synonymous with *Psychotria lucentifolia* as described and illustrated by Steyermark (1972, 1974). It is distinguished by its stipules, with the awns attached below the apex of the truncate sheath, the leaves with their bases obtuse to rounded or subcordate, and its pedunculate capitate inflorescences surrounded by 3–4 lanceolate to ovate bracts. Steyermark (1972) noted that leaf shape is variable. Several of these names are based on this variability, while others were described from areas far from where this species was well known, and previously published names were apparently overlooked. The identity of *Cephaëlis ostreophora* in particular was not clear for many years, and was considered by Sandwith (1949) to have been misinterpreted by Standley.

Psychotria timbiquensis (Standley) C. M. Taylor, comb. nov. Basionym: *Cephaëlis timbiquensis* Standley, Publ. Field Mus. Nat. Hist.,

Bot. Ser. 7: 81. 1930. TYPE: Colombia. Cauca: Río Timbiquí, *Lehmann 8991* (holotype, K not seen; isotypes, F (type fragment), P not seen).

This species has been confused with *Psychotria humboldtiana* (Chamisso) Mueller Argovienensis; it can be separated by its relatively dull and thin-textured leaves and inflorescences with the capitula borne in a pyramidal raceme, in contrast to very shiny coriaceous leaves and the capitula in an umbelliform arrangement in *P. humboldtiana*.

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